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Commercially Important Wild Mushrooms and Fungi of British Columbia

What the Buyers Are Buying

2003

BRITISH COLUMBIA

Ministry of Forests Forest Science Program

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Shannon M. Berch and Wendy Cocksedge

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ABSTRACT

Information collected from 10 wild mushroom buyers in British Columbia in early spring 2002 indicated that over 40 species of mushrooms have been commercially harvested from the forests of the province. Currently, however, two species—pine mushroom and Pacific golden chanterelle—dominate, and seven other species or species groups are handled by half of the buyers responding to the survey. Some of the fungi previously thought to be commercially harvested in British Columbia are in fact brought in from elsewhere. Also, misidentifications and taxonomic uncertainty in some cases mean that the exact identity of the fungi being harvested is not known. Nonetheless, this survey confirms that a variety of edible wild mushrooms from B.C. forests are commercially marketed.

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INTRODUCTION

In March and April 2002, we contacted known B.C. wild mushroom buyers with questions about the species, relative quantity, and destination of wild mushrooms and fungi harvested commercially from British Columbia. The list of buyers in *A Guide to Agroforestry in BC* (Small Woodlands Program of BC 2001) was updated and used as the starting point for the survey. The list of possible commercially important wild mushrooms and fungi of British Columbia was based on a number of literature sources (DeGeus 1995; Atwood 1998; Wills and Lipsey 1999; Tedder et al. 2000). We attempted to contact the 17 buyers on our list and obtained information from 10 of them. Summarized here is the information that they provided.

The information in this report should be thought of as a snapshot in time because the markets for wild mushrooms can change rapidly and some of the buyers change with them.

NUMBERS OF BUYERS BUYING AND SELLING EACH SPECIES

Pine mushroom (*Tricholoma magnivelare*) and Pacific golden chanterelle (*Cantharellus formosus*) are the two mushrooms bought and sold by the largest number of buyers, 10 (Table 1). Seven buyers reported that they handle white chanterelle (*Cantharellus subalbidus*) and morels (*Morchella elata* and *Morchella esculenta*). Five or six buyers handle hedgehog mushroom (*Hydnum repandum*), blue chanterelle (*Polyozellus multiplex*), and cauliflower fungus (*Sparassis crispa*).

Eight species are bought and sold by four buyers. Three of these species—horn of plenty (*Craterellus cornucopioides*), maitake (*Grifola frondosa*), and Oregon white truffle (*Tuber gibbosum*)—may in fact be harvested or grown primarily or exclusively in the United States (Table 2). We currently have little evidence that *Tuber gibbosum* occurs in British Columbia and two of the buyers report that their truffles come from Oregon. *Grifola frondosa* is not known from confirmed voucher collections from British Columbia but one of the buyers reported that small amounts of this fungus are collected in the province. Another buyer explained that their maitake is cultivated in the eastern United States. Two buyers reported that their horn of plenty came from Oregon and California but another buys small amounts that are harvested in British Columbia. Of the other five species—blewit (*Clitocybe nuda*), false morel (*Gyromitra esculenta*), lobster mushroom (*Hypomyces lactifluorum* on *Russula*), fried chicken mushroom (*Lyophyllum decastes*), and oyster mushroom (*Pleurotus ostreatus*)—the oyster mushroom handled by these buyers may be commercially grown rather than field collected and some is known to be imported.

The winter chanterelle (*Craterellus tubaeformis*), crested coral fungus (*Clavulina cristata*), pig's ear gomphus (*Gomphus clavatus*), delicious milk cap (*Lactarius deliciosus*), fairy ring mushroom (*Marasmius oreades*), angel wings (*Pleurocybella porrigens*), coral fungi (*Ramaria* spp.), Lake's slippery jack (*Suillus lakei*), and false early morel (*Verpa bohemica*) are all handled by three buyers in the province. Identification of the coral fungi (*Ramaria* and *Clavaria* spp.) can be difficult, so the exact identity of the species that are being commercially marketed is not known.

TABLE 1 *Number of buyers in March–April 2002 reporting that they buy and sell particular forest mushrooms and fungi harvested in British Columbia*

Number of buyers	Scientific name	Common name(s)
10	*Cantharellus formosus*	Pacific golden chanterelle
10	*Tricholoma magnivelare*	pine mushroom
7	*Boletus edulis*	king bolete, red tops
7	*Cantharellus subalbidus*	white chanterelle
7	*Morchella elata*	black morel, fire morel
7	*Morchella esculenta*	yellow morel, white morel
6	*Sparassis crispa*	cauliflower mushroom
5	*Hydnum repandum*	hedgehog mushroom
5	*Polyozellus multiplex*	blue chanterelle
4	*Clitocybe nuda*	blewit
4	*Craterellus cornucopioides*	horn of plenty
4	*Grifola frondosa*	maitake
4	*Gyromitra esculenta*	false morel, brain mushroom
4	*Hypomyces lactifluorum* on *Russula*	lobster mushroom
4	*Lyophyllum decastes*	fried chicken mushroom
4	*Pleurotus ostreatus*	oyster mushroom
4	*Tuber gibbosum*	Oregon white truffle
3	*Clavulina cristata*	crested coral fungus
3	*Craterellus tubaeformis*	winter chanterelle, yellowfoot
3	*Gomphus clavatus*	pig's ear gomphus
3	*Hericium erinaceus*	lion's mane fungus
3	*Lactarius deliciosus*	delicious milk cap
3	*Marasmius oreades*	fairy ring mushroom
3	*Pleurocybella porrigens*	angel wings
3	*Ramaria* spp.	coral fungi
3	*Suillus lakei*	Lake's slippery jack
3	*Verpa bohemica*	false early morel, spring verpa
2	*Armillaria ostoyae* and others	honey mushroom
2	*Calvatia gigantea*	giant puffball
2	*Coprinus comatus*	shaggy mane
2	*Hericium abietis*	conifer coral hericium
2	*Lycoperdon perlatum*	common puffball
1	*Auricularia auricula*	tree ear
1	*Boletus mirabilis*	velvet top, admirable bolete
1	*Boletus smithii*	Smith's bolete
1	*Boletus zelleri*	Zeller's bolete
1	*Fomitopsis officinalis*	quinine conk
1	*Gyromitra gigas*	snowbank false morel
1	*Lactarius rubrilacteus*	bleeding milk cap
1	*Leccinum aurantiacum*	red cap bolete
1	*Leccinum scabrum*	birch bolete
1	*Suillus brevipes*	short-stemmed slippery jack
1	*Suillus granulatus*	granulated slippery jack
1	*Suillus luteus*	slippery jack
1	*Suillus subolivaceus*	slippery jill
1	*Tricholoma caligatum*	booted tricholoma

Only one or two buyers each report that they handle or have handled the following species (Tables 1 and 3): sheep polypore (*Albatrellus ovinus*), honey mushroom (*Armillaria ostoyae* and others), tree ear (*Auricularia auricula*), admirable bolete (*Boletus mirabilis*), Smith's bolete (*Boletus smithii*), Zeller's bolete (*Boletus zelleri*), quinine conk (*Fomitopsis officinalis*), artist's conk (*Ganoderma applanatum*), varnish shelf (*Ganoderma oregonense*), scaly chanterelle (*Gomphus floccosus*), snowbank false morel (*Gyromitra gigas*), bleeding milk cap (*Lactarius rubrilacteus*), sulphur shelf or chicken of the woods (*Laetiporus sulphureus*), red cap bolete (*Leccinum aurantiacum*), birch bolete (*Leccinum scabrum*), turkey tail (*Trametes versicolor*), slippery jack (*Suillus luteus*), short-stemmed slippery jack (*Suillus brevipes*), granulated slippery jack (*Suillus granulatus*), slippery jill (*Suillus subolivaceus*), booted tricholoma (*Tricholoma caligatum*), giant puffball

TABLE 2 *Some problematic reports of commercially harvested wild mushrooms and fungi of British Columbia*

Scientific name	Common name	Problem
Auricularia auricula	tree ear	Might not be commercially collected from the wild in B.C. Might be imported. Is cultivated.
Calvatia gigantea	giant puffball	Most of the giant puffballs in the B.C. Interior are *Calvatia booniana*.[a]
Cantharellus cibarius var. *roseocanus*	rainbow chanterelle	May be confused with Pacific golden chanterelle.
Clavulina cristata	crested coral fungus	One buyer imports this fungus.
Clitocybe nuda	blewit	One buyer imports this fungus.
Craterellus cornucopioides	horn of plenty	Some is known to be imported from Oregon and other western states in the U.S. Unclear whether all is.
Fomitopsis officinalis	quinine conk	The buyer imports this fungus.
Grifola frondosa	maitake	Not documented to occur in B.C. Cultivated and imported from eastern U.S.
Leccinum scabrum	birch bolete	*Leccinum insigne* may be the most commonly harvested *Leccinum* in the B.C. Interior.[a]
Pleurotus ostreatus	oyster mushroom	Might not be commercially collected from the wild in B.C. Is cultivated. Produced locally and imported.
Ramaria and *Clavulina* spp.	coral fungi	Taxonomic uncertainty means that commercially harvested coral fungi are not identified to species.
Suillus spp.	slippery jacks	Buyers may also handle *Suillus tomentosus*.[a]
Tricholoma caligatum	booted tricholoma	May be confused with pine mushroom.
Tuber gibbosum	Oregon white truffle	Probably not harvested commercially in B.C. Imported from Oregon.

[a] Bill Chapman, Cariboo Forest Region, personal communication.

(*Calvatia gigantea*), shaggy mane (*Coprinus comatus*), conifer coral hericium (*Hericium abietis*), and common puffball (*Lycoperdon perlatum*).

Some of this information is a bit problematic (Table 2). The booted tricholoma is probably handled by all of the buyers who deal with pine mushroom because the two species can be difficult to distinguish and are known to be bought from pickers as pine mushroom (Tyson Ehlers, Marty Kranabetter, pers. comm., 2002). Similarly, rainbow chanterelle (*Cantharellus cibarius* var. *roseocanus*) is accepted along with Pacific golden chanterelle and the two species have been observed at buying stations on Vancouver Island (Redhead et al. 1997). Some of the "wild" mushrooms and fungi handled by mushroom buyers in British Columbia are actually or probably produced in cultivation. It seems unlikely that the tree ears are harvested from forests because this species is cultivated and is not found abundantly in the wild. One buyer indicated that oyster mushroom is imported and mushroom producers in the Lower Mainland are certainly growing many varieties of this species. In a couple of cases, similar species are either marketed together or, because of taxonomic uncertainty, not identified to species in our list. For instance, many similar *Boletus*, *Leccinum*, and *Suillus* species are probably harvested and sold under the general category of edible boletes.

One buyer also provided information on species that had previously been harvested commercially or at least tested for commercial potential in British Columbia but that are not currently being harvested in the province (Table 3).

TABLE 3 *Species previously but not currently commercially harvested*

Scientific name	Common name	Destination and/or use
Albatrellus ovinus	sheep polypore	Sweden
Ganoderma applanatum	artist's conk	For floral industry
Ganoderma oregonense	varnish shelf	Found to be too large for Japanese market
Gomphus floccosus	scaly chanterelle	For floral industry
Laetiporus sulphureus	sulphur shelf chicken of the woods	United States
Trametes versicolor	turkey tail	United States

RELATIVE AMOUNT BY SPECIES

When asked to indicate whether the mushrooms they bought were in relatively high, medium, or low quantities, the buyers indicated that they handled high quantities of pine mushroom, Pacific golden chanterelle, and hedgehog mushroom. A few species were handled in low to moderate quantities: blue chanterelle, Oregon white truffle, lobster mushroom, black morel, horn of plenty, king bolete, artist's conk, scaly chanterelle, and winter chanterelle. The rest of the species were handled only in low to very low quantities.

TABLE 4 *Destination markets of wild mushrooms and fungi from British Columbia*

Scientific name	Common name	Local	Canada	US[a]	NA[b]	Europe	Japan
Albatrellus ovinus	sheep polypore					Sweden	
Armillaria ostoyae and related species	honey mushroom			+			
Auricularia auricula	tree ear	+					
Boletus edulis	king bolete	+	+	+	+	Italy	
Boletus mirabilis	velvet top	+		+			
Boletus smithii	Smith's bolete	+					
Boletus zelleri	Zeller's bolete	+					
Calvatia gigantea	Giant puffball			+			
Cantharellus formosus and *Cantharellus cibarius* var. *roseocanus*	Pacific golden chanterelle and rainbow chanterelle	+	+	+	+	+	+
Cantharellus subalbidus	white chanterelle	+		+	+	+	
Clavulina cristata	crested coral fungus				+		
Clitocybe nuda	blewit	+			+		
Coprinus comatus	shaggy mane	+					
Craterellus cornucopioides	horn of plenty			+	+	+	
Craterellus tubaeformis	winter chanterelle	+			+	+	
Fomitopsis officinalis	quinine conk				+		
Ganoderma applanatum	artist's conk						
Ganoderma oregonense	varnish shelf						+
Gomphus clavatus	pig's ear gomphus				+		
Gomphus floccosus	scaly chanterelle						
Grifola frondosa	maitake	+			+		
Gyromitra esculenta	false morel	+		+		Sweden	
Gyromitra gigas	snowbank false morel	+					
Hericium abietis	conifer coral hericium	+	+	+			
Hericium erinaceus	lion's mane fungus	+	+		+		
Hydnum repandum	hedgehog mushroom	+		+	+	+	
Hypomyces lactifluorum on *Russula*	lobster mushroom	+		+	+	+	
Lactarius deliciosus	delicious milk cap			+			
Lactarius rubrilacteus	bleeding milk cap						
Laetiporus sulphureus	sulphur shelf chicken of the woods			+			
Leccinum aurantiacum	red cap bolete	+					
Leccinum scabrum	birch bolete	+					
Lycoperdon perlatum	common puffball		+	+			
Lyophyllum decastes	fried chicken mushroom	+		+	+		
Marasmius oreades	fairy ring mushroom	+			+	Germany	
Morchella elata	black morel	+	+	+	+	+	+
Morchella esculenta	yellow morel	+	+	+	+	+	+
Pleurocybella porrigens	angel wings	+		+			
Pleurotus ostreatus	oyster mushroom	+			+		
Polyozellus multiplex	blue chanterelle	+		+	+	+	
Ramaria spp.	coral fungi				+		
Sparassis crispa	cauliflower mushroom	+		+	+	+	
Suillus brevipes	slippery jack	+					
Suillus granulatus	dotted stalk slippery jack	+					
Suillus lakei	Lake's slippery jack	+					
Suillus luteus	slippery jack	+					
Suillus subolivaceus	slippery jill	+					
Trametes versicolor	turkey tail			+			
Tricholoma caligatum	booted tricholoma						+
Tricholoma magnivelare	pine mushroom	+		+	+	+	+
Tuber gibbosum	Oregon white truffle	+			+	+	
Verpa bohemica	false early morel		+		+		

[a] US = United States of America.
[b] NA = North America.

DESTINATION MARKETS

A few of the B.C. mushrooms and fungi have specific destinations (Table 4). For instance, in the past, sheep polypore was shipped to Sweden. Pine mushroom and booted tricholoma are sold primarily to Japan, although some are also marketed in British Columbia, the United States, and Europe.

Interestingly, buyers indicate that 33 species are marketed locally, probably mostly in the Vancouver area.

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